

IN THE CLAIMS

1-20. (canceled)

21. (previously presented) A fusion implant apparatus for facilitating fusion of bone structures, comprising:

an implant member⁽²⁾ for positioning between opposed bone structures, the implant member having a first end and a second end, and an outer wall⁽³⁾ defining an internal cavity for reception of bone growth inducing substances, the outer wall having at least one groove which encircles the outer wall and segments the implant member into discrete ring-like segments, each ring-like segment including a plurality of apertures extending therethrough in communication with the internal cavity to permit fusion of the vertebral bone tissue; and

the first end and/or the second end being dimensioned to engage an end cap.

22. (previously presented) The fusion implant apparatus of claim 21, wherein the groove is a continuous groove.

23. (previously presented) The fusion implant apparatus of claim 21, wherein the groove acts as a cutting guide during implantation of the fusion implant apparatus between opposed bone structures.

24. (previously presented) The fusion implant apparatus of claim 21, wherein the groove acts as a measurement guide during implantation of the fusion implant apparatus between opposed bone structures.

25. (previously presented) The fusion implant apparatus of claim 21, wherein the outer wall includes a plurality of grooves that segment the body into discrete ring-like segments.

26. (previously presented) The fusion implant apparatus of claim 25, wherein the height of at least two of the ring-like segments are varied.

27. (previously presented) The fusion implant apparatus of claim 25, wherein the grooves are oriented parallel to each other.

28. (previously presented) The fusion implant apparatus of claim 21, further including an end cap which is mountable to the first or second end of the implant member.

29. (previously presented) The fusion implant apparatus of claim 28, wherein the end cap includes a face having at least one aperture disposed therethrough which communicates with the internal cavity to permit fusion of vertebral bone tissue.

30. (previously presented) The fusion implant apparatus of claim 28, wherein the face of the end cap includes a plurality of apertures disposed therethrough which are arranged in an array like manner about the face.

31. (previously presented) The fusion implant apparatus of claim 28, wherein the end cap includes a face having a plurality of detents which extend outwardly therefrom, which serve to anchor the fusion apparatus to the bone structure.

32. (previously presented) The fusion implant apparatus of claim 31, wherein the detents are arranged radially about the face of the end cap.

33. (previously presented) The fusion implant apparatus of claim 31, where the detents are a spike-like configuration.

34. (previously presented) The fusion implant apparatus of claim 31, where the detents are arcuately-shaped and have a triangular cross section.

35. (previously presented) The fusion implant apparatus of claim 28, wherein the end cap includes at least one mechanical interface which engages the corresponding first or second end of the implant member.

36. (previously presented) The fusion implant apparatus of claim 35, wherein the mechanical interface of the end cap

includes a plurality of locking pins which engage the first or second end of the implant member.

37. (previously presented) The fusion implant apparatus of claim 35, wherein the mechanical interface of the end cap includes a diametrically tapered inner diameter, which is dimensioned for friction-fit engagement within the first or second end of the implant member.

38. (previously presented) The fusion implant apparatus of claim 35, wherein the mechanical interface of the end cap is generally C-shaped and includes:

two opposing ends which define a slit therebetween; and
a flange which is dimensioned to engage an annular recess disposed within the first or second end of the implant member.

39. (previously presented) The fusion implant apparatus according to claim 35, wherein the mechanical interface of the end cap includes two opposing arcuately-shaped retaining sleeves which extend concentrically within an inner periphery of the end cap and are dimensioned to engage an annular recess within the first or second end of the implant member.

40. (previously presented) The fusion implant apparatus of claim 39, wherein the arcuately-shaped retaining sleeves include an outer rim which is dimensioned to engage the annular recess disposed within the first or second end of the implant member.

41. (previously presented) A method for fusing vertebrae, comprising the steps of:

providing an implant member for positioning between opposed bone structures, the implant member having a first end and a second end, and an outer wall defining an internal cavity for reception of bone growth inducing substances, the outer wall having at least one groove which encircles the outer wall and segments the implant member into discrete ring-like segments,

each ring-like segment including a plurality of apertures extending therethrough in communication with the internal cavity to permit fusion of the vertebral bone tissue; and the first end and/or the second end being dimensioned to engage an end cap;

accessing the vertebral space defined between adjacent vertebral bodies;

determining the desired implant member length for insertion into the space between the adjacent vertebral bodies by using one of the grooves as a cutting and/or measurement guide;

sizing the implant member; and

advancing the implant member within the vertebral space between the adjacent vertebral bodies.

42. (previously presented) The method for fusing vertebrae of claim 41, further including packing the implant member with bone growth inducing substances.

43. (previously presented) The method of fusing vertebrae of claim 41, further including mounting an end cap to the first or second end of the implant member.

44. (new) A fusion implant apparatus for facilitating fusion of bone structures, comprising:

an implant⁽²⁾ member for positioning between opposed bone structures, the implant member having a first end and a second end, and an outer wall defining an internal cavity for reception of bone growth inducing substances, the outer wall having at least one planar groove which encircles the outer wall and segments the implant member into discrete ring-like segments, each ring-like segment including a plurality of apertures extending therethrough in communication with the internal cavity to permit fusion of the vertebral bone tissue; and

the first end and/or the second end being dimensioned to engage an end cap.

45. (new) The fusion implant apparatus of claim 44, wherein the at least one planar groove is perpendicular to the first end or second end of the implant member.

46. (new) A fusion implant apparatus for facilitating fusion of bone structures, comprising:

an implant member for positioning between opposed bone structures, the implant member having a first end and a second end, and an outer wall defining an internal cavity for reception of bone growth inducing substances, the outer wall having at least one groove which encircles the outer wall and segments the implant member into discrete ring-like segments, each ring-like segment including a plurality of apertures extending therethrough in communication with the internal cavity to permit fusion of the vertebral bone tissue, wherein the at least one groove does not intersect the plurality of apertures; and

the first end and/or the second end being dimensioned to engage an end cap.
